

On-Site Hydrogen Generation

Presentation to
NREL Industry Growth Forum

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Introducing H₂Gen Innovations

- Manufacturing on-site hydrogen generators
 - Product Shipped in 2005
 - Revenues in 2006
 - Break even + in 2007
 - Substantial EBITDA 2008
- 31-employee company, based in Alexandria, VA. Formed 2001
- Raised \$18.4 million from leading energy VC's and industry
- Won \$5.4 million DOE program: validates our technology

Our Markets



Hydrogen Energy & Fuels

Integrated Technology Applications

Existing Market for Hydrogen used in Industry

2006

2015

Our First Product: HGM 2000

Natural Gas

Water



7 ft.

Hydrogen

53 Nm³/h

2000 scf/h

113 kg/day

Low Cost

Small Footprint

Highly pure product

...that we're now delivering

- **Contract Progress:**
 - 5 approved agreements with major industrial gas companies
 - 6 HAZOP reviews successfully completed
 - Generating revenues: leases with options to buy
- **Manufacturing Progress:**
 - 5 units built
 - 1 shipped; 3 in test
- **Accepting commercial orders**
 - Substantial gross margins on first sales



..what we're manufacturing..



...to a large existing market

- **Merchant H2 Applications:**
 - Metal Annealing & Reduction
 - Glass
 - Hydrogenation of Edible Oils
 - Semiconductor Manufacturing
 - Chemicals
- **Market Size:**
 - Global “merchant” market: \$2.1 billion in annual sales of H2
 - \$5 billion in current infrastructure replacement cost;
 - **H2Gen profitable from this existing market with our current product**

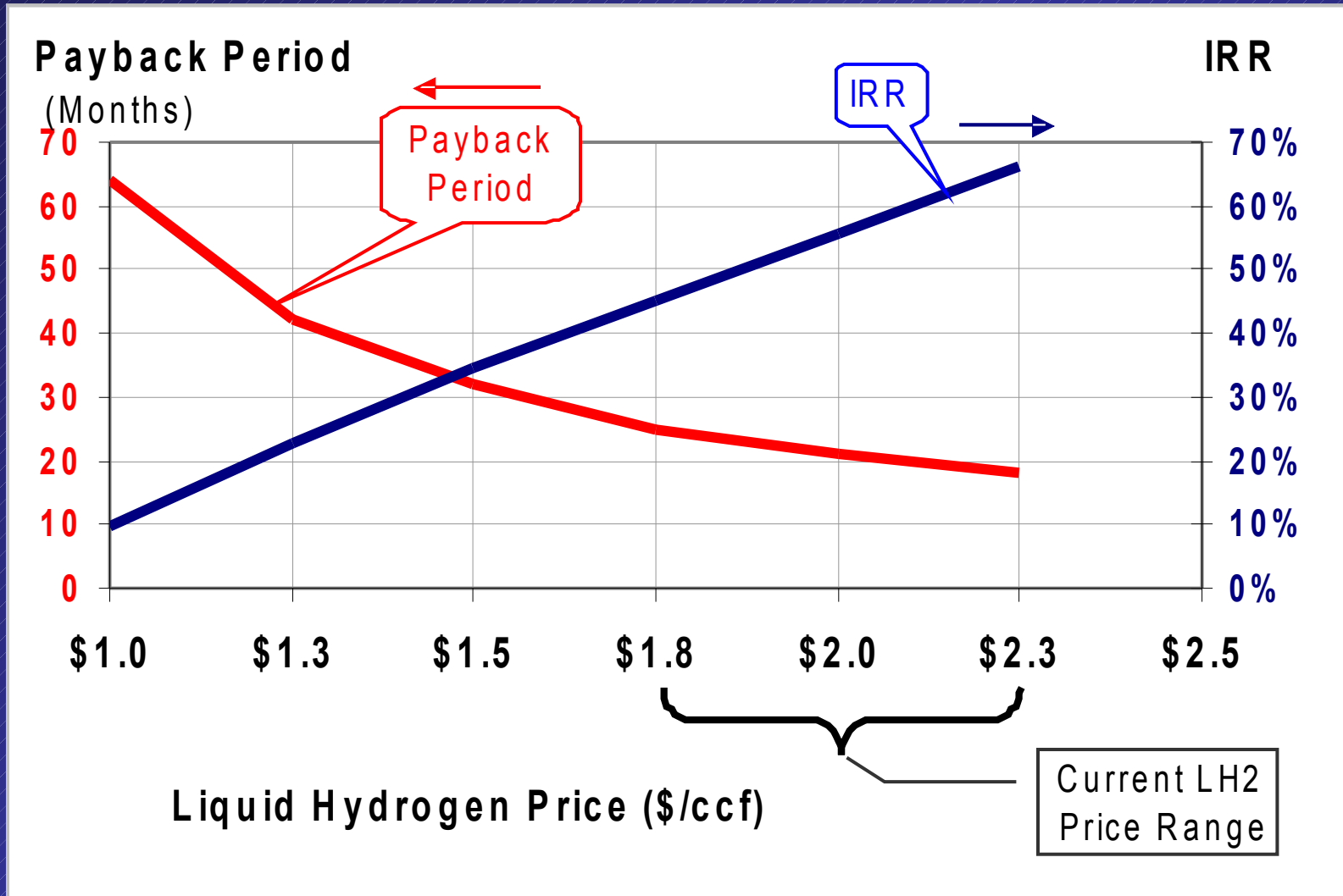
...whose customers value what we offer...

- **Low capital and operating costs** compared to alternatives
- **Safe:** Approved by major industrial gas companies
- **Reliable:** 10+ year design life; 95% + availability
- **Integrated:** H2 Generator, PSA purifier; all ancillaries and controls
- **Simple installation:** connect water, electricity & natural gas
- **Automatic operation:** press single button to start; load following
- **Mobile:** easily moved; fits in containers and trucks
- **High Efficiency:** superior to older centralized plants

...and see how it will improve
their business...

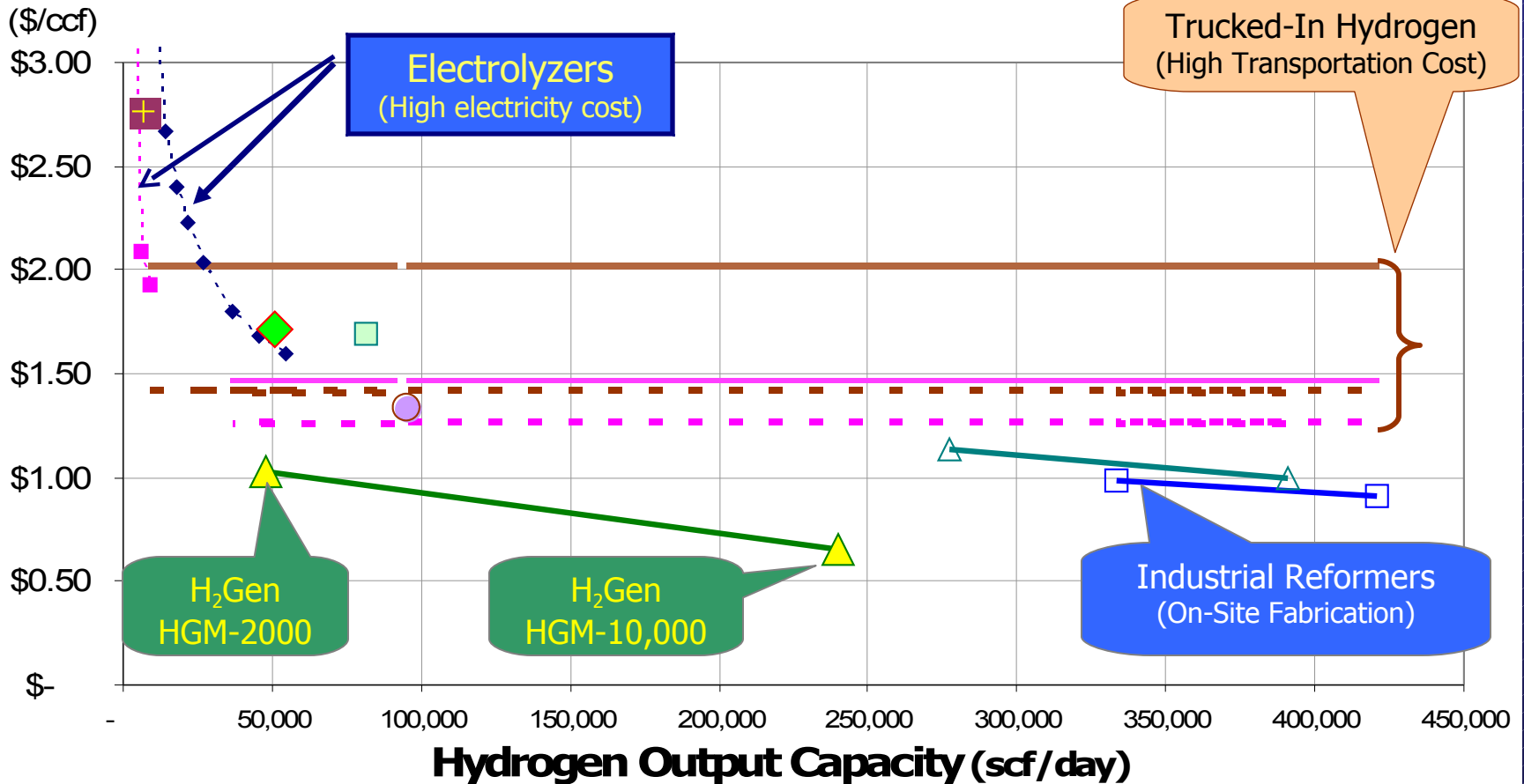
- **Primary channel to market developed with major industrial gas companies:**
 - On-site production: no trucking or liquefaction costs;
 - Right size for industrial market
 - “Surgical” investment pattern: cap ex only where needed, when needed
 - Logistics optimization
 - Means of entering new markets
- **Keen interest from end-use customers**
 - Hurricane Katrina: failure of centralized system accelerated interest in dependable on-site production

...with good returns...



...that beat the competition

Hydrogen Cost



Expansion opportunities we see:

- **Industrial Gases**

- World-wide market: rapid growth in Asia
- Demand for larger units: 5X, 12.5X current unit
- Revenue from service

- **Integrated technology applications:**

- Skid mounted gas-to-liquids
- Hydrogenation of bio-fuels
- Hydrogen + natural gas: improved gas turbine performance

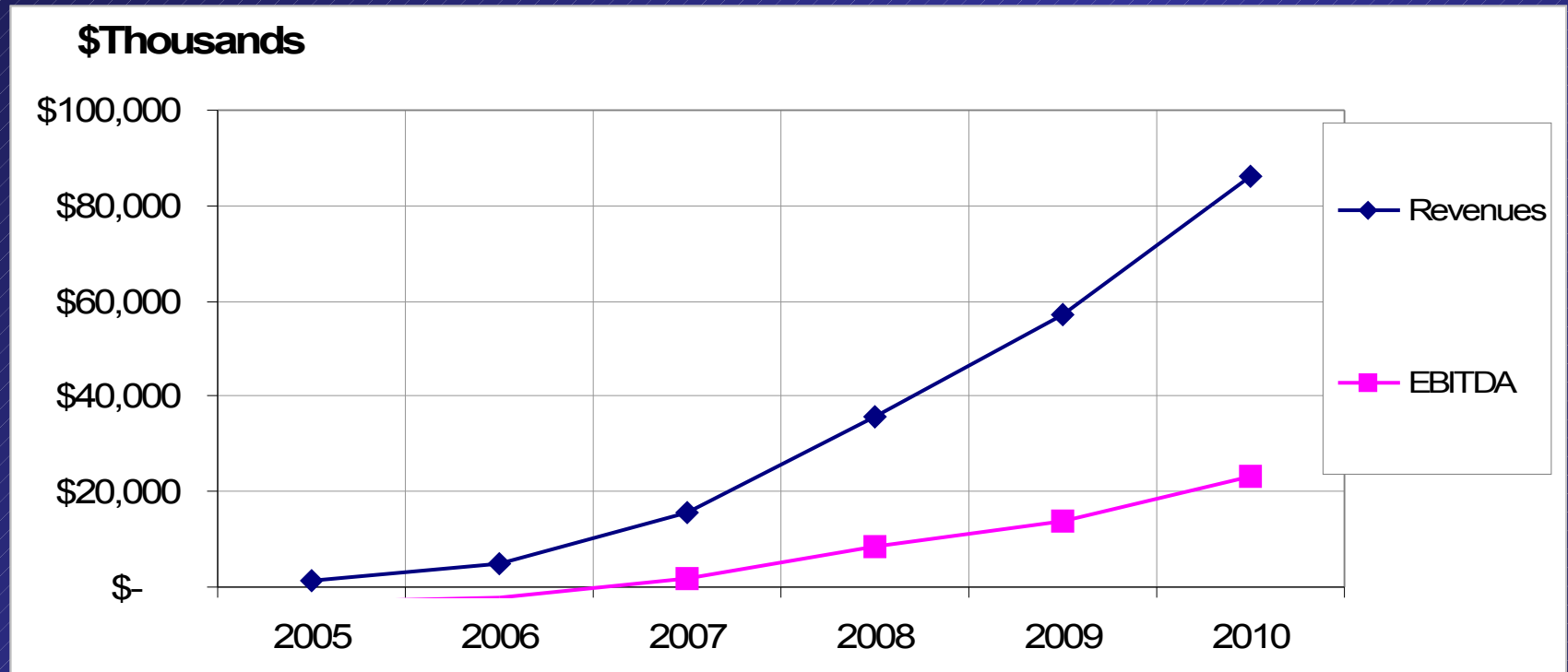
- **Intersection of key developments: hydrocarbon molecule transformation and distributed technologies**

- **We offer high efficiency, low-cost, scaled solutions**

- **Hydrogen for transportation**

- Beach head markets: competing against batteries (forklifts)
- Infrastructure for fueling vehicles: scalable, competitive

Financial Forecast



	2005	2006	2007	2008	2009	2010
Revenues	2,000	5,000	15,000	35,000	55,000	85,000
EBITDA	0	1,000	5,000	10,000	15,000	25,000
Operating Expenses	0	0	0	0	0	0
Net Income	2,000	4,000	10,000	25,000	40,000	60,000

Capital Raise

- Seeking up to \$15 million for mezzanine round:
- Strong insider participation
- Funds for facilities, new products and cushion
- Exit in 2-3 years

Investment considerations

- Shipping Product
- Seasoned management team
- Strong IP: 11 patents issued; another 9 pending
- Market today offers near term route to profitability.
- Great upside with developing markets